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| 10/581,593 | 02/05/2007 | Eckhard Bauer | N81813LPK | 3663 |
| 1333 7590 08/31/2009 EASTMAN KODAK COMPANY PATENT LEGAL STAFF 343 STATE STREET ROCHESTER, NY 14650-2201 | | | EXAMINER HA, NGUYEN Q | |
| | | | ART UNIT 2854 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/581,593

Applicant(s)

BAUER ET AL.

Examiner

'Wyn' Q. HA

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6 is/are rejected.
7) ☒ Claim(s) 7-10 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

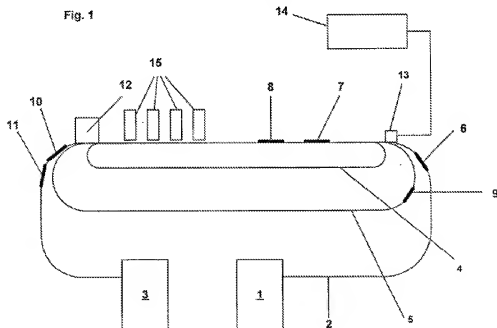
Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/5506)
Paper No(s)/Mail Date 6/5/06
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Inventor's Patent Application
6) ☐ Other: _____

DETAILED ACTION

An examiner's overview of the present invention

The present invention entails a method of feeding recording sheets in a printer, which comprises a continuous transport belt **4**, a simplex feed path **2**, and a duplex feed path **5** (Fig. 1, reproduced below). The method aims to prevent recording sheets (e.g., sheets **7** and **8**) transported by the transport belt **4** from being placed at a seam of the belt **4**. That is, the printer detects and determines a position of the seam of the belt **4** and controls feeding of the sheets such that the sheets (e.g., sheet **7** and **8**) fed onto the belt **4** do not cover or overlap the seam of the belt **4**. The method also aims to prevent the sheets from colliding with one another while being fed onto the belt **4**. Lastly, in order to achieve most efficient use of space on the belt **4**, the method aims to feed the sheets onto the belt **4** such that sheet intervals between the sheets on the belt **4** are minimized.



Specification

The disclosure is objected to because of the following informalities:

On page 8, it is considered to be inappropriate with "x" referring to two completely different things.

Appropriate correction is required.

Claim Objections

Claims 7-10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claims 1 and 3-5 are objected to because of the following informalities:

Claim 1: "the alternate selection" appears to lack proper antecedent basis, and could be changed to -- an alternate selection--.

Claim 3: The term "the reverse side" appears to lack proper antecedent basis, and could be changed to --a reverse side--.

Claim 4: The term "the section of the sheet to be printed on the reverse side" appears to lack proper antecedent basis, and could be changed to --the section **to be occupied by** the sheet to be printed on the reverse side--.

Claim 5 is further objected to because it appears to be a multiple dependent claim depending on another multiple dependent claim. It is suggested that the recitation of "as in one of the previous claims, in particular" be deleted so that the claim would clearly depend on claim 4.

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Also, in claim 5, the term "the section of a sheet" appears to lack proper antecedent basis, and could be changed to --the section **to be occupied by the sheet to be printed on the reverse side**--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3/1 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagatani et al. (US 6,047,148).

Nagatani teaches the following:

Claim 1:

Method of feeding sheets of printing material in a printing machine (Fig. 4, reproduced below), preferably a digital printing machine, on a **continuous loop transport means 5**, in particular a transport belt 5, which has at least **one dead space section 5a**, specifically a seam 5a, detectable by a **seam detector 10**, and which is preferably included in a **transport path 9** which permits an alternate selection between simplex printing and duplex printing (Col. 5 lines 42-49: "In a

case where the reverse side of the paper also is to be copied or printed for a two-sided copy, the paper is inverted at the paper inverting unit 9a...and then transported to the circulation path 9"), in which case it has been taken into account that **a region**, preferably the leading edge of a respective sheet on the transport means, **is detected** for the control of a printing process **by means of a detecting device 13** (Col. 5 lines 12-15: "a sensor 13 for sensing the paper which is supplied from the paper cassette is provided"),

wherein **when a sheet is fed, its region to be detected is prevented from entering the dead space section 5a of the transport means 5**. That is, as the examiner would understand, a sheet fed from a sheet supply cassette is prevented from overlapping the dead space section or seam 5a (See Nagatani's col. 7 lines 45-49 and col. 9 lines 40-45, digested below).

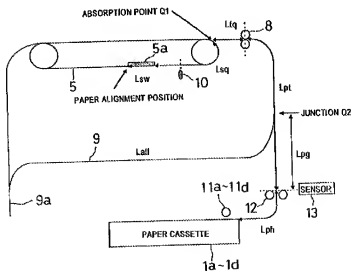


FIG. 4

Col. 7 lines 45-49 and col. 9 lines 40-45: "the position of the seam 5a is detected, and necessary information is generated. Some of the information relates to the prohibition and permission of paper supply, and the prohibition and

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permission of rotation of the timing roller 8...The paper-supply permission flag 1 is set only if it is determined that if a paper is supplied from a selected cassette at the time of determination, the paper will not overlap the seam 5a of the transfer belt 5."

Claim 3/1:

Nagatani/Takano teaches the method of claim 1, further characterized in that **when the sheet is fed for obverse printing, said sheet, or its region to be detected, is prevented from entering a section to be occupied by a sheet to be printed on a reverse side.** That is, as the examiner would understand, a sheet supplied from the paper cassette for observe printing is prevented from colliding with a sheet which has been circulated in the transport path 9 for printing an image on a back face.

Col. 8 lines 45-59: "The paper-supply permission flag 1 indicates that if a paper is supplied at the current point of time, the paper will not overlap the seam 5a of the transfer belt 5. The paper-supply permission flag 2 indicated that if a paper is supplied at the current point of time, the paper will not collide with the paper which has been circulated in the circulation path 9 for recording an image on the back face."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3/2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagatani in view of Takano et al. (US 6,029,041).

Claim 2:

Nagatani teaches the method of claim 1, wherein when a sheet is fed, its region to be detected is prevented from entering a dead space (inappropriate) section, or seam 5a, of the transport belt (as discussed above). Nagatani also teaches that **a feeding time for a sheet**, which has its detectable region fall within the dead space (inappropriate) section, or seam 5a, **may be delayed by a period**, so that the recording sheet which is to be supplied does not overlap the dead space (inappropriate) section, or seam 5a, and also does not overlap an inverted recording sheet which is re-fed for transferring images on the other side thereof (Col. 2 lines 52-59). Note that Nagatani's **transport belt 5 may be driven at a constant velocity** (Col. 4 lines 52-54) and, as mentioned, a feeding time for a sheet may be delayed by a period. And, conceivably, since Nagatani would prevent the fed sheet from overlapping the seam 5a and/or a sheet to be printed on a reverse side, **either a section of the transport belt 5 occupied by the seam 5a or another section of the transport belt 5 occupied by a sheet to be printed on a reverse side would constitute a dead space (inappropriate) section for the fed sheet to avoid.**

It is not clear to the examiner if Nagatani's delayed period corresponds to the size of the dead space (inappropriate) section, or seam 5a, in transport direction divided by the transport speed of the transport means (= passing by period for the dead space section, or seam 5a). That is, it is not clear if Nagatani's delayed period would correspond to a period required for the dead space (inappropriate) section, or seam 5a, to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a.

Takano teaches a method similar to Tagatani's method of feeding sheets of printing material in a printing machine (See Takano's fig. 1, reproduced below), preferably a digital printing machine, on **a continuous loop transport means 5**, in particular a transport belt 5, which has at least **one dead space section 5a** (Fig. 4, reproduced below), specifically a seam 5a, detectable by **a seam detector 10**, and which is preferably included in **a transport path 9** (fig. 1) which permits an alternate selection between simplex printing and duplex printing (Col. 8 lines 58-61), in which case it has been taken into account that **a region**, preferably the leading edge of a respective sheet on the transport means, **is detected** for the control of a printing process **by means of a detecting device 13** (Col. 21 lines 55-60: "The timing sensor 13 is turned on when the leading edge of the supplied paper comes in contact with the timing roller 8"), wherein **when a sheet is fed, its region to be detected is prevented from entering the**

dead space section 5a, or seam 5a, of the transport means 5 (Col. 10 lines 45-49).

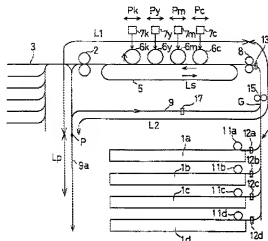


FIG. 1

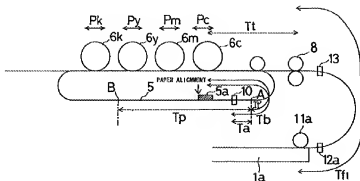


FIG. 4

Takano further teaches that, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a, driving of the transport belt may be delayed while the feeding time for a sheet may be constant...But if the transport belt were otherwise driven at a constant velocity and the feeding time for a sheet were delayed (as taught by Nagatani), then,

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Takano suggests, the sheet would have to wait for the dead space (inappropriate) section, or seam 5a, to pass by (Col. 24 lines 2-11); namely the feeding time for the sheet would have to be delayed by a period required for the dead space (inappropriate) section, or seam 5a, to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a.

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to have Nagatani's delayed period correspond to the size of the dead space (inappropriate) section, or seam 5a, in transport direction divided by the transport speed of the transport means. That is, the delayed period would correspond to a period required for the dead space (inappropriate) section, or seam 5a, to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a, as suggested by Takano.

Claim 3/2:

Nagatani/Takano teaches the method of claim 2, further characterized in that **when the sheet is fed for obverse printing, said sheet, or its region to be detected, is prevented from entering a section to be occupied by a sheet to be printed on the reverse side** (Nagatani's col. 8 lines 45-59: "the [fed] paper will not collide with the paper which has been circulated in the circulation path 9 for recording an image on the back face").

Claim 4:

Nagatani/Takano teaches the method of claim 3/2, wherein, in duplex printing, when the sheet is fed for obverse printing, said sheet, or its region to be detected, is prevented from entering a section to be occupied by a sheet to be printed on a reverse side. Nagatani, as discussed in claim 2 above, also teaches that **a feeding time for a sheet may be delayed by a period** so that the fed sheet does not overlap a dead space (inappropriate) section. Further, as discussed in claim 2, a section occupied by a sheet to be printed on a reverse side would constitute a dead space (inappropriate) section. In other words, **a size of a sheet to be printed on a reverse side equals to a dead space (inappropriate) section imposed by said sheet.**

It is not clear to the examiner if Nagatani's delayed period corresponds to the size of the section to be occupied by a sheet (size of the sheet) to be printed on a reverse side in transport direction divided by the transport speed of the transport means (= passing by period for the sheet to be printed on a reverse side). That is, it is not clear if Nagatani's delayed period would correspond to a period required for a sheet to be printed on a reverse side to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section imposed by the sheet to be printed on a reverse side.

Takano, as discussed in claim 2, suggests that if the transport belt were driven at a constant velocity and a feeding time for a sheet were delayed (as taught by Nagatani), the sheet would have to wait for the dead space (inappropriate) section to pass by; namely a feeding time for a sheet would have to be delayed by a period required for the dead space (inappropriate) section to pass by.

Thus, as discussed in claim 2, it would have been obvious to have Nagatani's delayed period correspond to a period required for a dead space (inappropriate) section to pass by, as suggested by Takano.

Obviously, as discussed in claim 2, in duplex printing where a section occupied by a sheet to be printed on a reverse side would constitute a dead space (inappropriate) section, Nagatani's delayed period would as well correspond to a period required for a dead space (inappropriate) section, imposed by a sheet to be printed on a reverse side, to pass by. Therefore, since a size of a sheet to be printed on a reverse side equals to a dead space (inappropriate) section imposed by said sheet, Nagatani's delayed period would as well correspond to a period required for the sheet to be printed on a reverse side to pass by.

Claim 5:

Nagatani/Takano teaches the method of claim 4, further characterized in that **the sheet's length (size) in transport direction and a required**

intermediate space relative to a subsequent sheet (i.e. a required sheet interval) are taken into account.

Nagatani's col. 8 lines 36-40 and col. 9 lines 10-15: "in Step S525 which corresponds to the state counter value of 2 [paper-supply permission flag 2], a predetermined time interval is taken before the next paper-supply in order to maintain the paper interval constant...The timer is used to keep a correct paper interval between the current paper and the next paper. The paper interval is determined based on the paper size."

Takano's Col. 10 lines 47-49: "This paper-feed timing is determined based on the position of the seam and the paper size." Col. 13 lines 13- 31: "The paper-supply interval must be controlled during the imaging on the print surface."

Claim 6:

Nagatani/Takano teaches the method of claim 5, further characterized in that **a space ($T\beta$, $T\phi$) for register marks** (See Takano's fig. 5, reproduced below) on the transport belt 5 to be taken into account (Takano's col. 11 lines 28-50).

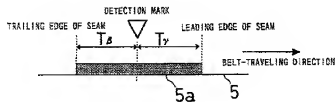


FIG.5

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to "Wyn" Q. HA whose telephone number is (571)272-2863. The examiner can normally be reached on Monday - Friday, from 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NQH

/Judy Nguyen/
Supervisory Patent Examiner, Art Unit 2854